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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,476	10/17/2005	Giuseppe Penzo	FE 6102 (US)	8660
34872	7590	12/19/2007		
Basell USA Inc. Delaware Corporate Center II 2 Righter Parkway, Suite #300 Wilmington, DE 19803			EXAMINER TESKIN, FRED M	
			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 12/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,476	Applicant(s) PENZO ET AL.	
	Examiner Fred M. Teskin	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The Reply of October 1, 2007 has been fully considered with the following effect:

(i) the objection to the disclosure is maintained and applicants' argument found unpersuasive as detailed below;

(ii) the indicated allowability of claims 16-18 (rewritten as new, independent claims 29, 40 and 51) is withdrawn and a new ground of rejection presented as detailed below.

The disclosure stands objected to as informal due to the absence of a brief description of the drawings in accordance with 37 CFR 1.74. Appropriate correction is required.

Applicants' arguments filed October 1, 2007 have been fully considered but they are not persuasive. The portion of the Specification cited by applicants as describing Figs. 1 and 2 (page 10, ll. 16-19 and page 11, ll. 22-24) is in fact part of the detailed description of the drawings. The Rules, however, require both a brief description of the several views of the drawing as well as a detailed description thereof (see, Rules 74 and 77(b)(8)-(9)). Applicants have pointed to no section of the Specification wherein a brief description of said figures is provided in accord with Rule 74, and examiner has independently found none.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 29-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0825204 taken in view of WO 02/41986 alone or together with the evidence provided by Brown et al.

EP '204 discloses a continuous process for polymerizing olefins in a fluidized bed reactor, wherein a gaseous stream withdrawn from the reactor is recycled by cooling and separating condensed liquid from the resultant gas-liquid stream in a separator integral with the reactor and located under the fluidization grid (i.e., distributor plate), as in the applicants' process. See paragraphs 0013 and 0080 and Figs. 1-2 of EP '204. Per paragraph 0026, it is preferred that substantially the whole of the recycled gaseous stream is cooled and separated and substantially the whole of the separated liquid is introduced into the fluidized bed. Regarding claims 29 and 51, note that separation of the condensed liquid may be via *coalescence* of liquid droplets on a baffle situated near the point of entry of the stream to the separator, or by arranging the stream inlet *tangentially* to the walls of the separator so that the separator acts as a cyclone (see paragraph 0035). Given the integral arrangement of separator and reactor and location of the former under the fluidization grid, a tangential arrangement of the inlet stream to the separator walls, as disclosed, would result in the gas-liquid stream being reintroduced in the manner claimed; i.e., in a direction tangential to at least one reactor wall as per claim 29.

Thus, as to claims 29-39 and 51-61, EP '204 lacks only a teaching of the claimed step of feeding at least a portion of the separated, condensed liquid above the fluidized

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bed through an external pipe connecting a bottom of the fluidized bed reactor to a position above the upper limit of the fluidized bed.

In this regard, however, WO '986 describes a fluidized bed reactor characterized by one or more external pipes connecting the lower part of the reaction chamber to a top part thereof and/or the outlet section, situated above the reaction chamber; see page 3, lines 19-22 and Fig. 1/1. By affording a greater supply of liquid to the reactor (relative to supplied amount of gas), the presence of the connecting pipe(s) is taught to result in higher production rates than in known reactors of equal dimensions (page 3, ll. 23-27). Condensed mode operation of the disclosed reactor in a continuous process for polymerizing olefins is detailed on pages 7-9. Recycling a gas-liquid mixture to the reactor is detailed at page 8, lines 30+.

Thus, WO '986 teaches, as alternative embodiments, terminating the external pipe in the wall of the reaction chamber or the outlet section of the reactor (pp. 4-5, bridging paragraph), for the purpose of transporting condensed liquid to the upper portion of a fluidized bed reactor in order to enhance production rate.

Since EP '204 is similarly concerned with achieving higher levels of productivity via enhanced cooling effect (*cf.*, e.g., paragraph 0053), it would have been obvious to an ordinarily skilled practitioner at the time of applicants' invention to modify the process disclosed therein by feeding the condensed, separated liquid through an external pipe(s) as per WO '986 to a position above the upper limit of the fluidized bed, as claimed. The expectation of thereby providing an alternative continuous polymerization process with comparable improvements in production rate would have provided the

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requisite motivation to those of ordinary skill in the art to modify the primary reference so as to produce the instantly claimed invention.

Regarding claims 40-50, EP '204 differs from the claimed subject matter in failing to explicitly teach that the condensed liquid is separated from the gas by a centrifugal effect and fed above the fluidized bed through an external pipe connecting a bottom of the fluidized bed reactor to a position above the upper limit of the fluidized bed.

However, as noted above, EP '204 does provide (paragraph 0035) for use of an integral separator that may act as a cyclone. Further, as evidenced by Brown et al, the prior art has recognized both cyclone and centrifugal separators as suitable means for separating liquid from a cooled gas-liquid recycle stream to a fluidized bed reactor for polymerizing olefins (see Brown at col. 7, ll. 21+) . It would have been obvious to one of ordinary skill in the art to replace the cyclone in EP '204 with a centrifugal separator because the mere substitution of an equivalent (something equal in value of meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known in the prior art, the substitution of one equivalent for another is not patentable (i.e., it would have been obvious). *In re Ruff*, 118 USPQ 343 (CCPA 1958). To then feed the separated liquid through an external pipe to a position above the upper limit of the fluidized bed, as claimed, would have been obvious to one of ordinary skill from WO '986 as discussed above, or from the teaching of Brown et al that the separated liquid may be transferred through an external line to a region of the reactor above the fluidized bed; e.g., the expanded section as shown in Fig. 3 thereof.

No claims are in condition for allowance at this time.


In view of the new grounds of rejection presented above, this action is made non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMTeskin/12-12-07


FRED TESKIN
PRIMARY EXAMINER
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